APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,074	01/25/2001	Colin I'Anson	30001736US	4695

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EXAMINER
PEREZ, ANGELICA

ART UNIT	PAPER NUMBER
2684	8

DATE MAILED: 07/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*25 January 2001*</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 17-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 17-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All b)☐ Some * c)☐ None of:
   1.☒ Certified copies of the priority documents have been received.
   2.☐ Certified copies of the priority documents have been received in Application No. _____.
   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
   since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
   37 CFR 1.78.
   a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
   reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

In the remarks, the applicant argued in substance:

(A) On page 11, lines 7-10, Stinson does not disclose…"method of cost sensitive control of data transfer between a mobile entity and a data network through cellular radio infrastructure…".

In response to argument (A), the examiner pointed out and further explains in claim 1 the following…(e.g., "most economical path" column 3, lines 37-39) control of data transfer between a mobile entity and a data network through a cellular radio infrastructure (figure 1; where figure 1 shows the cellular radio infrastructure, items 10 and 140 being mobile entities that communicate with networks 100 and 105 through "routing hub" 95). Where broadly interpreted, it is shown that data transfer control between a mobile entity and a data network is effectuated in a cellular radio infrastructure.

(B) On page 11, lines, 10-13, "…receiving a transfer descriptor indicative of <u>at</u> <u>least</u> generally, the end points of a required data transfer… and of a transfer criteria…".

In response to argument (B), the examiner selected "transfer criteria" e.g., "quality of service indicator".

(B) On page 11, lines 15-19, "…Stinson discloses a quality of service indicator concerning the maximum latency…This maximum latency is an inherent delay in the path and not any delay criterion…"

In response to argument (B), the examiner indicates that the term latency is interchangeably used as delay and if broadly interpreted, it comprises delay. Also, latency if broadly interpreted can be used as a "criteria" to be taken into consideration as an "acceptable delay before transfer initiation". Latency provides the time it will take the information to travel through the network, therefore, the user can have an estimated time duration of delivery, before the data initiates its transference. In addition, new art Discloses a different broad interpretation that can be applied. It can be found in claim 1.

Specification

2.   The disclosure is objected to because of the following informalities: On page 5, line 21, it should read by "a" corresponding…instead of "an"; on line 5 of page 10, it should read "identity" instead of "identify". On page 7, line 3, elements "67" should be elements "68" according to figure 3. Also, on page 10, line 10 and 11, Internet "35" should be "39" according to picture 2. The period that appears at the beginning of line 11, on page 10, should be erased. Appropriate corrections are required.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stinson

(Stinson Michael K., US Patent No.: 6,493,556 B1) in view of Zonoun (Zonoun,

Mohammad Reza; US Patent No.: US 6,487,172 B1) and further in view of Hilsenrath

(Hilsenrath, Michael; UK Patent Application No.: 2,328,117 A).

Regarding claims 1 and 22, Stinson teaches of a service system with means for

effecting (column 2, lines 13-20) a method of cost-sensitive (e.g., "most economical

path" column 3, lines 37-39) control of data transfer between a mobile entity and a data

network through a cellular radio infrastructure (figure 1; where figure 1 shows the

cellular radio infrastructure, items 10 and 140 being mobile entities that communicate

with networks 100 and 105 through "routing hub" 95), the method involving carrying out

the following steps at a service system (figure 2).

Stinson does not specifically teach of receiving a transfer descriptor indicative of,

at least generally, the end points of a required data transfer, and of transfer criteria to be

met by this transfer, these criteria comprising at least a cost criterion; and of

determining by reference to both current and future data-transfer tariffs whether and, if

so, how, the data transfer can be effected within the transfer criteria where step (b)

produces a positive determination, instructing initiation of the data transfer in

accordance therewith (figure 5, item S16; where depending on the outcome of the least

cost route determination, the call connection is effectuated).

In related art concerning packet network route selection method and apparatus,

Zonoun teaches of receiving a transfer descriptor indicative of, at least generally, the

end points of a required data transfer (column 3, lines 18-19; e.g., "requester's ID field"

and "destination ID field"), and of transfer criteria to be met by this transfer (column 3, lines 20-29; where the criteria is "actual cost of sending the packet" and "delay in transporting the package"), these criteria comprising at least a cost criterion (column 3, lines 20-29; e.g., "actual cost of sending the packet"; where the examiner selected the "cost criterion" from the choices provided in the criteria).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Stinson's method with Zonoun's transfer descriptor indicative and transfer criteria in order to reduce the cost of data-transfer by providing specific variables such as source/destination and transfer criteria, as taught by Zonoun .

Stinson in view of Zonoun does not teach of determining by reference to both current and future data-transfer tariffs whether and, if so, how, the data transfer can be effected within the transfer criteria where step (b) produces a positive determination, instructing initiation of the data transfer in accordance therewith (figure 5, item S16; where depending on the outcome of the least cost route determination, the call connection is effectuated).

In related art, concerning least cost routing, Hilsenrath teaches of determining by reference to both current and future data-transfer tariffs whether and, if so, how, the data transfer can be effected within the transfer criteria (page 10, lines 5-14 and page 24, lines 14-17; where "it is generally cheaper to transmit information at night" corresponds to "future data-transfer tariffs"); where step (b) produces a positive determination, instructing initiation of the data transfer in accordance therewith (figure 5,

item S16; where depending on the outcome of the least cost route determination, the

call connection is effectuated).

It would have been obvious to a one of ordinary skill in the art at the time the

invention was made to combine Stinson's and Zonoun's method with Hilsenrath's

current and future data-transfer tariffs in order to obtain the least cost for data transfer,

as taught by Zonoun.

Regarding claim 2, Stinson in view of Zonoun and further in view of Hilsenrath

teaches all the limitations according to claim 1. In further art, Zonoun teaches where the

transfer descriptor complies with one of the following instances, the instances being

selected from the group consisting of: the transfer descriptor is supplied by a network-

connected resource (column 2, lines 29-30; e.g., "Internet") and concerns downloading

of data from a mobile entity; the transfer descriptor is supplied by a network-connected

resource and concerns uploading of data to a mobile entity (e.g., It is inherent for

"internet interface" to "upload" and "download" data; column 2, lines 28-34), and any

combinations thereof (e.g., It is inherent for "internet interface" perform both "upload"

and "download" of data; column 2, lines 28-34).

Regarding claim 4, Stinson in view of Zonoun and further in view of Hilsenrath

teaches all the limitations of claim 1. Stinson also teaches where the cost criterion

specifies that the data transfer is to be effected at lowest cost consistent with the other

transfer criteria, if any (column 8, lines 7-10).

Regarding claim 8, Stinson in view of Zonoun and further in view of Hilsenrath

teaches all the limitations according to claim 1. In addition, Stinson teaches where the

transfer criteria further comprise a minimum transfer bit rate (where "channel bandwidth" allocation depends on the "rate"; columns 2 and 3, lines 66-68 and 1-3, respectively).

Regarding claim 10, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. In addition, Stinson teaches where step (b) involves accessing tariff data for the cellular radio infrastructure, the tariff data being available through at least one of the following mechanisms: fetched as needed over the data network from a tariff server (figure 1, item 210); provided by the infrastructure in response to a specific enquiry detailing the data transfer (column 4, lines 32-38).

Regarding claim 13, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. In addition, Stinson teaches where step (b) involves considering more than one cellular radio infrastructure for effecting the transfer and selecting the infrastructure that provides the lowest-cost fit with the transfer criteria (column 4, lines 1-5).

Regarding claim 14, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. In addition, Stinson teaches, where step (b) involves considering multiple data transfer service providers for effecting the transfer and selecting the service provider that provides the lowest-cost fit with the transfer criteria (lines 5-11 of the abstract).

Regarding claim 15, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. In addition, Stinson teaches, where step (b) involves considering more than one cellular radio infrastructure for effecting the

transfer and carrying out an auction between the infrastructures to determine which infrastructure is to be used (column 4, lines 32-38).

Regarding claim 18, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. In addition, Stinson teaches, where step (c) involves the service system contacting the infrastructure to initiate data transfer set up by the infrastructure in accordance with the determination effected in step (b) (column 3, lines 42-54).

Regarding claim 19, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. In addition, Stinson teaches, where step (c) involves the service system effecting the data transfer through itself including by setting up a data transfer path with the mobile entity through the cellular radio infrastructure in accordance with the determination made in step (b). (column 3, lines 55-67).

Regarding claim 22, Stinson teaches of a service system for effecting. Moreover, Stinson teaches, of a service system with means for effecting each of the method steps of claim 1(column 2, lines 13-20).

5.   Claims 3, 5-7, 9, 11-12, 20-21 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stinson (Stinson Michael K., US Patent No.: 6,493,556 B1) in view of (Zonoun, Mohammad Reza; US Patent No.: US 6,487,172 B1) and further in

view of Hilsenrath (Hilsenrath, Michael; UK Patent Application No.: 2,328,117 A) and

further in view of Shaffer (Shaffer, Shmuel, EP No. 0,848,560 A2).

Regarding claim 3, Stinson in view of and further in view of Hilsenrath teaches all

the limitations according to claim 1.

Stinson in view of Zonoun and further in view of Hilsenrath does not specifically

teach where the cost criterion sets a maximum cost for effecting the data transfer.

In related art concerning quality of service at or below a threshold cost, Shaffer

teaches where the cost criterion sets a maximum cost for effecting the data transfer

(column 15, lines 11-14).

It would have been obvious to a one of ordinary skill in the art at the time the

invention was made to combine Stinson's, Zonoun's and Hilsenrath's method with

Shaffer's maximum cost for effecting data transfer in order to keep the cost of data

transfer within a client's affordability, as taught by Shaffer.

Regarding claims 5 and 23, Stinson in view of Zonoun and further in view of

Hilsenrath teaches all the limitations according to claims 1 and 22. In addition, Stinson

teaches of serving to determine the lowest cost at which the data transfer can be

effected within a delay acceptable for that cost according to the cost function (where

"delay" according to Newton's Telecom Dictionary corresponds to "latency"; column 3,

lines 13-17). Shaffer further teaches where the cost criteria and the delay criteria are

jointly expressed as a delay-dependent cost function for which the acceptable delay

before transfer can be effected decreases with the maximum acceptable cost for the

transfer (column 15, lines 24-30; where present-time present time quality of service (e.g., "delay") can change in future times).

Regarding claim 6, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. In further art, Shaffer teaches where the cost criteria and the delay criteria are jointly expressed as a set of cost functions for each of which the acceptable delay before transfer can be effected decreases with the maximum acceptable cost for the transfer successive cost functions of the set, other than a first cost function, having higher maximum acceptable cost for a given delay than a preceding cost function of the set (where "delay" is included in the "quality of service"; columns 15 and 16; lines 54-58 and 1-5), step (b) using each cost function in succession, starting with the first cost function, until a positive determination is made for effecting the data transfer at a cost which is within the function currently being used, this cost being the lowest cost at which the data transfer can be effected within a delay acceptable for that cost according to the cost function (column 16, lines 1-9).

Regarding claim 7, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. Shaffer further teaches where the transfer descriptor indicates that the data transfer is to be repeated according to a predetermined schedule, the method involving repeating steps (b) and-(c) for that transfer descriptor according to said schedule (columns 11 and 12; lines 56-58 and 1-14, respectively).

Regarding claim 9, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. Shaffer further teaches where the

transfer descriptor references a predetermined set of transfer criteria accessible to the service system (column 12, lines 43-47).

Regarding claim 11, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. In addition, Shaffer teaches where step (b) involves a negotiation conducted between the service system and a server representing the infrastructure (column 2, lines 46-49).

Regarding claim 12, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. In addition, Shaffer teaches where step (b) involves specifying the required data transfer and the transfer criteria to a server representing the infrastructure and receiving back an indication of whether the infrastructure can effect the transfer as specified (column 5, lines 20-22).

Regarding claim 17, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. In addition, Shaffer teaches where step (c) involves sending a message to one endpoint of the data transfer specifying the set up of data transfer by that endpoint in accordance with said determination effected in step (b) (column 12, lines 12-15).

Regarding claim 20, Stinson in view of Zonoun and further in view of Hilsenrath teaches all the limitations according to claim 1. In further art, Shaffer teaches where the data transfer concerns a transfer of data to the mobile entity, the data to be transferred being passed to the service system along with the transfer descriptor where it is temporarily stored, step (c) involving initiating a transfer to the mobile entity, of the data temporarily stored at the service system (column 5, lines 8-20).

Regarding claim 21, Shaffer teaches of a method of effecting real-time regulation of data traffic through a cellular radio infrastructure, comprising the steps of (column 5, lines 48-50): (i) - effecting traffic-dependent changes to the tariff structure for data transfer through the infrastructure and making the current tariff structure accessible over to a data network (column 6, lines 43-50);

Shaffer does not specifically teach of receiving a transfer descriptor indicative of, at least generally, the end points of a required data transfer, and of transfer criteria to be met by this transfer, these criteria comprising at least a cost criterion; and of determining by reference to both current and future data-transfer tariffs whether and, if so, how, the data transfer can be effected within the transfer criteria where step (b) produces a positive determination, instructing initiation of the data transfer in accordance therewith (figure 5, item S16; where depending on the outcome of the least cost route determination, the call connection is effectuated).

In related art concerning packet network route selection method and apparatus, Zonoun teaches of receiving a transfer descriptor indicative of, at least generally, the end points of a required data transfer (column 3, lines 18-19; e.g., "requester's ID field" and "destination ID field"), and of transfer criteria to be met by this transfer (column 3, lines 20-29; where the criteria is "actual cost of sending the packet" and "delay in transporting the package"), these criteria comprising at least a cost criterion (column 3, lines 20-29; e.g., "actual cost of sending the packet"; where the examiner selected the "cost criterion" from the choices provided in the criteria).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Shaffer's method with Zonoun's transfer descriptor indicative and transfer criteria in order to reduce the cost of data-transfer by providing specific variables such as source/destination and transfer criteria, as taught by Shaffer.

Shaffer in view of Zonoun does not teach of determining by reference to both current and future data-transfer tariffs whether and, if so, how, the data transfer can be effected within the transfer criteria where step (b) produces a positive determination, instructing initiation of the data transfer in accordance therewith (figure 5, item S16; where depending on the outcome of the least cost route determination, the call connection is effectuated).

In related art, concerning least cost routing, Hilsenrath teaches of determining by reference to a current and by reference to a future data-transfer, whether the data transfer is complementary to transfer criteria (page 10, lines 5-14 and page 24, lines 14-17; where data transfer criteria is cost), and where a positive determination is produced, instructing an initiation of the data transfer (figure 5, item S16; where depending on the outcome of the least cost route determination, the call connection is effectuated), and where the service system is used for the data transfer, the service system being connected to the data network referred in step (i) in accordance therewith (page 9, line 23-25).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Shaffer's and Zonoun's method with Hilsenrath's current and future data-transfer tariffs in order to obtain the least cost for data transfer.

Regarding claim 24, Stinson in view of Zonoun and further in view of Hilsenrath

teaches all the limitations according to claim 22. Shaffer further teaches where the cost

criteria and the delay criteria are jointly expressed as a delay-dependent cost function

for which the acceptable delay before transfer can be effected decreases with the

maximum acceptable cost for the transfer (column 15, lines 24-30; where present-time

present time quality of service (e.g., "delay") can change in future times), Shaffer also

teaches of successive cost functions of the set, other than a first cost function, having

higher maximum acceptable cost for a given delay than a preceding cost function of the

set (where "delay" is included in the "quality of service"; columns 15 and 16; lines 54-58

and 1-5), Shaffer also teaches of the determination device being arranged to use each

cost function in succession, starting with the first cost function, until a positive

determination is made for effecting the data transfer at a cost which is within the

function currently being used, this cost being the lowest cost at which the data transfer

can be effected within a delay acceptable for that cost according to the cost function

(column 16, lines 1-9).

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US patent No.: 6,473,404 B1, relates to multi-protocol telecommunications routing optimization.

US Patent No.: 5,532,939 A, refers to a method and apparatus for data communication efficiency analysis.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Angelica Perez whose telephone number is 703-305-

8724. The examiner can normally be reached on 7:15 a.m. - 3:45 p.m., Monday -

Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Nay Maung can be reached on 703-308-7745. The fax phone numbers for

the organization where this application or proceeding is assigned is 703-872-9314 for

regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the TC 2600's customer service number is 703-306-

0377.

NAY MAUNG
SUPERVISORY PATENT EXAMINER

Angelica Perez
(Examiner)

Art Unit 2684

July 1, 2004